

REMARKS

Claims 1 - 10 are presently pending. In the above-identified Office Action, the Examiner finalized a restriction requirement and withdrew Claim 11 from consideration. A minor objection to the Drawings was entered. Claim 10 was rejected under 35 U.S.C. § 112, second paragraph. Claims 1 – 10 were rejected under 35 U.S.C. § 102(b) as being anticipated by Scholz ('987) and under 35 U.S.C. § 102(e) as being anticipated by Pope et al. ('581).

By this Amendment, Applicants have cured the objections to the Drawings and amended the Claims. For the reasons set forth more fully below, Applicants respectfully submit that the subject application properly presents Claims patentable over the prior art. Accordingly, reconsideration, allowance and passage to issue are respectfully requested.

The invention of the subject application addresses the need in the art for a system and method for providing highly reliable, low cost z-axis interconnect between substrates in a three-dimensional stack of circuit boards. The invention provides an assembly for providing electrical connection between first and second substrates aligned in a stacked configuration. The inventive assembly includes a conductor assembly having at least one elongate conductor adapted to engage a first electrical contact on the first substrate on one end and a second electrical contact on the second substrate on a second end thereof. The conductor is adapted to provide a spring force on each end thereof. The spring force is provided by the unique shape of the conductor, which includes a **three-bend hook shape** on each end thereof.

The invention addresses the shortcomings of the previous methods. The design of the spring contacts allows for wide vertical spacing tolerances. It also provides a wiping action during assembly. Because of the spring contact design, the force required to maintain good mechanical contact is low. In addition to these features, this interconnect method allows for multiple, high density ($\leq 0.025''$) contacts with low contact resistance, high reliability, ease of manufacture, and low cost. This z-axis interconnect scheme allows for ease of

stack repair, since the cable contacts can be replaced each time the assembly is repaired, if necessary. Unlike prior approaches, which depend on close vertical tolerances in the mating substrates, this method is forgiving of uneven substrate contact surfaces.

The invention is set forth in claims of varying scope of which Claim 1 is illustrative. Claim 1, as amended, reads as follows:

1. An assembly for providing electrical connection between first and second substrates aligned in a stacked configuration, said assembly comprising:

a conductor assembly having at least one elongate conductor adapted to engage a first electrical contact on said first substrate on one end and a second electrical contact on said second substrate on a second end thereof, said conductor **having a three-bend hook shape at each end thereof to provide a spring force on each end thereof** and

means for retaining said conductor in abutting contact with at least one of said first or second contacts and thereby effect an electrical connection between said first contact on said first substrate and said second contact on said second substrate.
(Emphasis added.)

None of the references cited by the Examiner teaches, discloses or suggests the invention as presently claimed. Specifically, none of the references teaches, discloses or suggests an assembly for providing electrical connection between first and second substrates aligned in a stacked configuration, the assembly comprising, *inter alia*, at least one elongate conductor adapted to

engage a first electrical contact on the first substrate on one end and a second electrical contact on the second substrate on a second end thereof, with **the conductor having a three-bend hook shape at each end** to provide a spring force.

The Examiner cited Scholz and Pope as anticipating the invention as claimed. While each of these references purports to show an electrical interconnect assembly, Scholz clearly does not provide a spring force at both ends of the conductors (22) thereof and Pope does not provide the advantageous three-bend hook shape at each end. Accordingly, Pope's design would not provide the spring force required for neither a good electrical connection nor a wiping action. (See element 12.)

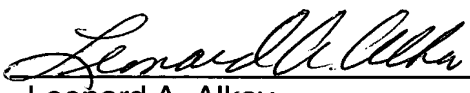
None of the references, taken alone or in combination, teaches, discloses or suggests the invention as presently claimed. That is, none of the references shows a conductor having a three-bend hook shape at each end thereof. Clearly, the invention as defined in the Claims, as amended, is not anticipated by Pope or Scholz.

Finally, the Examiner's objection to Claim 10 is not understood. Why would the recitation of a "High density electrical assembly" in the preamble of Claim 10 render this claim indefinite relative to the preamble of Claim 1 (and presumably Claims 2 - 9) which recite an "An assembly for providing an electrical connection"? Clarification is requested.

Accordingly, reconsideration, allowance and passage to issue are respectfully requested.

Respectfully submitted,
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